

countries are experiencing an increasing prevalence of chronic diseases due to ageing population and lifestyle factors. Our paper aims to review the association between chronic diseases and risk of workplace injuries, and propose a health-based risk assessment framework which would incorporate employees' health factors into the risk assessment process which employers are familiar with.

Methods We first reviewed the evidence for the association between chronic diseases and risk of injuries in the workplace through literature review. Subsequently, we proposed a health-based risk assessment framework that incorporates employees' health factors, giving examples on how this can be done, and at the same time highlight some of the challenges.

Results Many recent studies found that increased body mass index was associated with higher risk of injuries, while older workers were at risk of more severe injuries. Diabetes mellitus was also associated with workplace injuries in some studies. There were fewer studies looking at other chronic diseases such as hypertension. Our proposed health-based risk assessment framework incorporates employees' health into the risk assessment process outlined in the current Code of Practice for Risk Assessment, in a similar way as that for occupational health and safety hazards.

Discussion A health-based risk assessment framework can improve the integration of health and safety and minimise the need to have different methods of managing health and safety.

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ANALYSIS OF UNSTABLE CHROMOSOMAL ABERRATIONS FREQUENCY, MICRONUCLEI TEST, HAEMATOLOGICAL PARAMETERS AND RECEIVED DOSES BY PROFESSIONALS EXPOSED TO IONISING RADIATION

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Introduction Ionising radiation is often used in medicine for diagnostic and therapeutic purposes. Radiation workers exposed to ionising radiation have to follow all the safety measures and precautions at their work. The purpose of this article was to analyse the impact of low-dose ionising radiation to medicine professionals exposed to ionising radiation of the Clinical Centre of Serbia.

Methods Data from the last medical check-ups, obtained from the medical records of 148 employees from Clinical centre of Serbia, were analysed. They were divided into three groups: employees in nuclear medicine, in interventional radiology and general radiology. A typical check-up, haematological parameters analysis, as well as special cytogenetical analyses, such as unstable chromosomal aberrations and micronucleus test, were carried out. The received cumulative 5 year dose was measured by personal inactive thermoluminescent dosimeters calibrated into personal doses equivalent Hp (10).

Results By comparing the results of the frequency of unstable chromosomal aberrations in the last periodical check-up of the employees in all the three groups we have found that the nuclear medicine employees had a significantly higher frequency of unstable chromosomal aberrations ($\chi^2=6.634$;

$p<0.05$). Employees in nuclear medicine had significantly lower levels of red blood cells as compared to employees in general and interventional radiology. Statistically higher platelet count was ascertained with the employees in general radiology (ANOVA, $p<0.01$). Nuclear medicine employees have received statistically higher cumulative dose than the employees in interventional radiology and general radiology ($\chi^2=23.465$; $p<0.01$). There is also no statistically significant difference in the outcome of the micronucleus test between groups of employees ($\chi^2=1.245$; $p>0.05$).

Discussion Out of the three groups of employees tested, nuclear medicine employees have increased health risks than employees in interventional radiology and general radiology. There is a need to monitor their health condition by periodical check-ups for prevention from occupational diseases.

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THUNDERSTORM ASTHMA IN THE MEDITERRANEAN AREA: SEASONAL WEATHER AND EFFECT ON HEALTH FOR OUTDOOR WORKERS

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Introduction An increasing body of evidence shows the occurrence of asthma epidemics, sometimes also severe, during thunderstorms in the pollen season, in various geographical zones. Thunderstorms have been linked to asthma epidemics and there are descriptions of asthma outbreaks associated with thunderstorms in several cities, prevalently Australia (Melbourne) and Europe (in UK Birmingham and London, and in Italy in Naples). Considering this background it is important to promote the dissemination of these evidence also in occupational setting.

Methods Analysis of literature was performed on asthma, thunderstorm, occupational health. Description of these events in the Mediterranean area was also investigated.

Results Asthma outbreaks associated with thunderstorms occurred in several cities as London (24/25 June 1994) and Melbourne (21 November 2016). In the first outbreak 640 patients with asthma or other airway diseases attended London hospitals (nearly 10 times the usual number); in Melbourne, hospitals were swamped with emergency patients affected by severe asthma attacks (more than 8500 patients across Monday night and Tuesday and 8 died). The frequency of thunderstorms had recently increased in some geographical areas, particularly in temperate and subtropical climates. Research has shown that thunderstorms are expected to become more severe as the climate changes.

Conclusion Thunderstorms have been linked to asthma epidemics, especially during the pollen seasons. There is evidence that hat under wet conditions or during thunderstorms, pollen grains, release into the atmosphere their content that can reach lower airways inducing asthma reactions.

All individuals affected by pollen allergy should be alerted to the danger of being outdoors during a thunderstorm in the